IMPROVEMENT OF MAINTENANCE MANAGEMENT SYSTEM TOENHANCE AVAILABILTY PERFORMANCE OF NATIONAL ICT BROADBAND BACKBONE (NICTBB): The Case Study of Tanzania Mainland.

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The telecommunication industry in Tanzania has experienced significant growth as a response to the rapid changes that occurred in the global economy. To support this growth, the government of Tanzania in 2010 established the National ICT broadband backbone (NICTBB), the optical fibre network connecting all regional centers in Tanzania Mainland. The performance of the network has been affected by frequent breakdowns, mainly caused by fibre cuts. The fibre cut incidences have become the key source of network failures leading to service interruption. The study aimed at to identify the factors which significantly contribute to the fibre cut events.

To achieve the research objective, network performance data: failure rates, source of failures, mean time to repair and network availability were collected and analyzed using Statistical Package for Social Science (SPSS) and Microsoft Excel. The relative importance guidance index method was used to rank the factors to identify the factors which are the most significant source of failures. The identified factors are work order management, maintenance record management,outside interference related factors such as contractors work, rodents, vandalism and mean time to repair. The study finding proposed the identified factors to be the best predictors of network availability. SPSS was used to develop the multiple regression model which includes the identified factors as the independent variables and the network availability as the dependent variable. The development of a maintenance management system was made based on outside interference factors.

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